AS 10303.11—1998
ISO 10303-11:1994

Australian Standard™

Industrial automation systems and integration—Product data representation and exchange

Part 11: Description methods: The EXPRESS language reference manual

This Australian Standard was prepared by Committee IT/6, Information Technology for Industrial Automation and Integration. It was approved on behalf of the Council of Standards Australia on 16 June 1998 and published on 5 September 1998.

The following interests are represented on Committee IT/6:

Association of Consulting Engineers Australia

Australian Air Transport Association

Australian Chamber of Manufactures

Australian Electrical and Electronic Manufacturers Association

Australian Foundry Institute

Australian Information Industry Association

Australian Institute of Steel Construction

Australian Robot Association

Bureau of Steel Manufacturers of Australia

CSIRO Centre for Planning and Design

CSIRO Manufacturing Science and Technology

Department of Defence, Australia

Department of Industry, Science and Tourism, Australia

Federal Chamber of Automotive Industries

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New South Wales TAFE Commission

New Zealand Chambers of Commerce and Industry

New Zealand Defence Force

New Zealand Heavy Engineering Research

New Zealand Institute of Architects

New Zealand Manufacturers' Federation

Royal Australian Institute of Architects

Royal Melbourne Institute of Technology

University of Auckland (New Zealand)

University of Melbourne

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PREFACE

This Standard was prepared by Standards Australia Committee IT/6, Information Technology for Industrial Automation and Integration. The Standard is the result of a consensus among the representatives on the Committee that it be produced as an Australian Standard. It is identical with and has been reproduced from ISO 10303-11:1994, *Industrial automation systems and integration—Product data representation and exchange*, Part 11: *Description methods: The EXPRESS language reference manual*.

The objective of this Standard is to provide users of integrated automation systems with a specification of the EXPRESS language which is a formal information requirements specifications language.

This Standard is Part 11 of AS 10303, *Industrial automation systems and integration—Product data representation and exchange*, which is published in Parts as follows:

Part 1: Overview and fundamental principles
Part 11: Description methods: The EXPRESS language reference manual (this Standard)
Part 21: Implementation methods: Clear text encoding of the exchange structure
Part 31: Conformance testing methodology and framework: General concepts
Part 41: Integrated generic resources: Fundamentals of product description and support
Part 42: Integrated generic resources: Geometric and topological representation
Part 43: Integrated generic resources: Representation structures
Part 44: Integrated generic resources: Product structure configuration
Part 46: Integrated generic resources: Visual presentation
Part 101: Integrated application resources: Draughting
Part 201: Application protocol: Explicit draughting
Part 203: Application protocol: Configuration controlled design

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the annex to which they apply. A ‘normative’ annex is an integral part of a Standard, whereas an ‘informative’ annex is only for information and guidance.

As this Standard is reproduced from an international Standard, the following applies:

(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

(b) In the source text ‘this International Standard’ should read ‘this Australian Standard’.

(c) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to equivalent Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard or other publication		*Australian or Joint Australian/New Zealand Standard*	
ISO		AS	
10303	Industrial automation systems and integration—Product data representation and exchange	10303	Industrial automation systems and integration—Product data representation and exchange
10303-1	Part 1: Overview and fundamental principles	10303.1	Part 1: Overview and fundamental principles

ISO/IEC		AS/NZS	
8824	Information technology—Open Systems Interconnection—Abstract Syntax Notation One (ASN.1)		
8824-1	Part 1: Specification of Basic Notation	—	
10646	Information technology—Universal multiple-octet coded character set (UCS)	4189	Information technology—Universal multiple-octet coded Character Set (UCS)
10646-1	Part 1: Architecture and basic multilingual plane	4189.1	Part 1: Architecture and basic multilingual plane

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AUSTRALIAN STANDARD

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1 Scope

This part of ISO 10303 defines a language by which aspects of product data can be specified. The language is called *EXPRESS*.

This part of ISO 10303 also defines a graphical representation for a subset of the constructs in the *EXPRESS* language. This graphical representation is called *EXPRESS-G*.

EXPRESS is a data specification language as defined in ISO 10303-1. It consists of language elements which allow an unambiguous data definition and specification of constraints on the data defined.

The following are within the scope:

- data types;
- constraints on instances of the data types.

The following are outside the scope of this part of ISO 10303:

- definition of database formats;
- definition of file formats;
- definition of transfer formats;
- process control;
- information processing;
- exception handling.

EXPRESS is not a programming language.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 10303. At the time of publication, the editions indicated were